

# RESERVE COPY PATENT SPECIFICATION

612511



Application Date: Nov. 17, 1944.

No. 22841/44.

Complete Specification Accepted: Nov. 15, 1948.

Index at acceptance:—Classes 20(ii), D9; 36, C3x; and 99(i), G9.

## COMPLETE SPECIFICATION

### Improvements relating to the Rendering Waterproof of Joints or Fissures in Building Structures

We, WILLIAM BRIGGS AND SONS LIMITED, a British Joint Stock Company, of East Camperdown Street, Dundee, Scotland, and GEORGE ARTHUR MARCH, a British subject, of 28—29a, Vauxhall Grove, London, S.W.8, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to waterproofing building structures.

In buildings many instances arise where it is required to render waterproof either at the time of erection or at some subsequent time cracks and crevices where moisture tends to leak through.

A particular instance of this are cases where piping passes through an outside wall and some fissure occurs or develops between the pipe surface and the wall through which moisture tends to creep.

The object of the present invention is to provide a convenient and efficient means by which waterproofing can be effected in such cases, and the invention consists broadly in a method of sealing fissures in building structures against moisture leakage according to which bitumen loaded hessian is applied to the part to be rendered waterproof and caused to adhere in watertight condition thereto by the application of heat and pressure. Theoretically the same result could be obtained with other materials such as bitumen loaded felt fibre but this would involve the application of hot bitumen to the loaded felt fibre since sufficient bitumen cannot be incorporated into the felt fibre sheeting during manufacture as will enable complete adhesion under the action of applied heat to be attained or to give to the finished work the weight of bitumen required to effect

satisfactory waterproofing. Hessian sheeting can, however, be loaded with sufficient bitumen during manufacture to give complete adhesion, and sufficient weight of bitumen to the finished work without addition so that it can be successfully and satisfactorily welded to the work by the mere use of a blow lamp.

The use of bitumen loaded Hessian for this purpose also has another advantage in that if bent around a sharp angle it remains inert without the tendency to "spring" which would inevitably occur in the case of other waterproofing materials such as the felt fibre above referred to.

In order that the invention may be more readily understood and carried into practice reference is hereby made to the accompanying drawings, which illustrate one example of the invention, and the manner of its application.

These drawings illustrate the four stages in rendering waterproof the junction between a pipe and a wall through which it passes.

Figure 1 being a section view through the wall and pipe after the first stage of the treatment has been effected;

Figures 2, 3 and 4 show the intermediate stages, the final result being shown in Figures 5 and 6.

Referring to these drawings, the numeral 1 designates a wall and 2 a pipe running through the wall. The numeral 3 designates a first main sheet of some waterproofing material which may conveniently be bitumen loaded felt provided, of course, with a hole through which the pipe 2 passes. In the next stage of the process it is essential to use a bitumen loaded Hessian junction strip or washer 4. This strip or washer has to conform to the shape of the pipe and involves some measure of skilled work, the requisite number of layers of

BEST AVAILABLE COPY

BEST AVAILABLE COPY

the bitumen loaded Hessian being hammered and moulded to the required shape.

The pipe having been cleaned with a wire brush this washer 4 having a flange 4a is arranged in position and its ring part welded to the pipe 2 and its flange 4a to the layer 3 by heating with a blow lamp and while the metal of the pipe and the sheeting are cooling they are hammered or heavily pressed together to make adhesion certain.

Another strip or sheet of waterproofing material 5 provided with a hole to accommodate the pipe is applied overlapping the vertical flange 4a of the junction washer 4 as shown in Figure 3 and then another bitumen loaded Hessian washer 6 is applied as shown in Figure 4.

The waterproofing layers 3 and 5 may be either bitumen loaded felt fibre or bitumen loaded Hessian.

In cases where the felt fibre is used the completed arrangement is shown in Figure 5, a third waterproofing layer 7 being applied as shown and a shaped final bitumen loaded Hessian junction sleeve 8 welded over the junction washer 6.

If, however, bitumen loaded Hessian has been employed for the main waterproofing layers the third layer can be dispensed with, the completed arrangement being as shown in Figure 6.

The foregoing is given by way of example and has been selected as it is a case which presents the difficulty of having to deal with angularities but the invention envisages the use of bitumen loaded Hessian junction strips applied by means of a blow lamp for sealing fissures of many kinds, since bitumen loaded Hessian sheeting can be built up in laminations with the aid of heat and pressure to any desired thickness and by reason of its ductility can be pressed or hammered into various shapes and in many cases can be applied directly to seal a crevice or fissure by the simple expedient of heating by means of a blow pipe and hammering or pressing it on to the work while it is cooling.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A method of sealing fissures in building structures against moisture leakage according to which bitumen loaded Hessian is applied to the part to be rendered waterproof and caused to adhere in watertight condition thereto by the application of heat and pressure.

2. A method of sealing fissures in building structures against moisture leakage as claimed in claim 1, according to which laminations of bitumen loaded Hessian are amalgamated and shaped to a desired conformation, are then applied to the part to be rendered waterproof, and caused to adhere thereto under the heat derived from a blow lamp and hammering or pressure.

3. A method of rendering waterproof the joint between a pipe and a wall through which it passes according to which bitumen loaded Hessian sheeting is shaped into a flanged junction washer having a hole for enabling it to be threaded over the pipe, its flange being brought into contact with a waterproof layer applied to the wall and is then caused to adhere both to the pipe surface and the waterproof layer by the application of the heat of a blow lamp and hammering or pressure.

4. A method of rendering waterproof the joint between a pipe and a wall according to claim 3, having an additional waterproof layer applied so as to overlap the flange of the bitumen loaded Hessian junction washer and a further Hessian loaded junction washer applied in adhesive relation with the first junction washer and the second waterproof layer.

5. A method of rendering waterproof the joint between a pipe and a wall according to claim 3 or 4, wherein a final bitumen loaded Hessian sleeve is applied and caused to adhere to the exposed junction washer.

6. A method of sealing fissures in building structures against moisture leakage substantially as described with reference to the drawings.

Dated this 17th day of November, 1944.

A. A. THORNTON,  
Chartered Patent Agents,  
Napier House, 24-27, High Holborn,  
London, W.C.1.  
For the Applicants.

BEST AVAILABLE COPY

612,511

COMPLETE SPECIFICATION

1 SHEET

FIG.1.

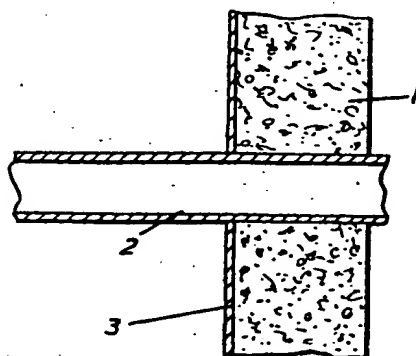


FIG.2.

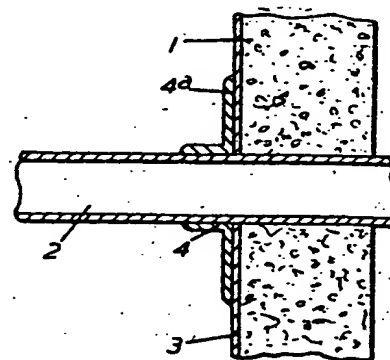


FIG.3.

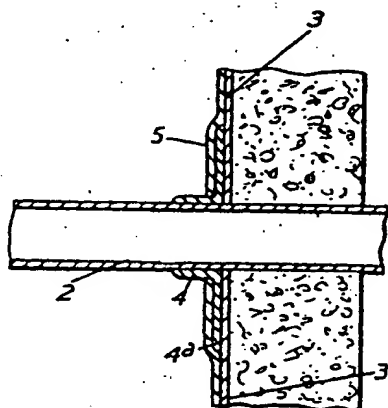


FIG.4.

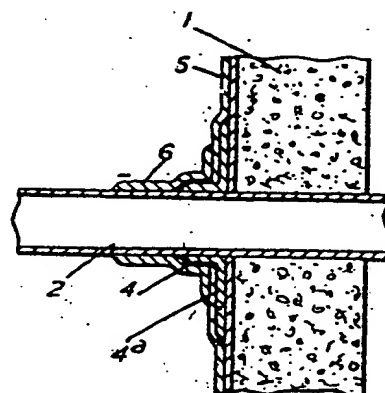


FIG.6.

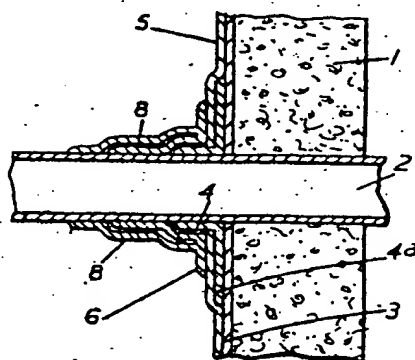
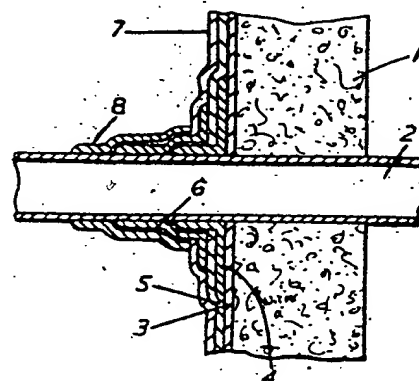


FIG.5.



[This Drawing is a reproduction of the Original on a reduced scale.]

THE UNIVERSITY OF CHICAGO